MONTANA Natural Heritage Program

A program of the
Natural Resource Information System,
Montana State Library
in partnership with
The Nature Conservancy

. optimolocus .

Number 4 .**The Newsletter of the Montana Natural Heritage Program** **Spring 2002**

In This Issue:

What's New?

On our Website:

New HomePage Look:
http://nhp.nris.state.mt.us/

Montana Bird Distribution Database: *with interactive data entry*

More Reports On-line: *click the Reports button on our home page; see page 4 for a list of recently posted reports*

NatureServe Explorer: *access to compiled Natural Heritage Program data for all of North America*

Public Land & Conservation Easement InteractiveMapping:
http://nris.state.mt.us/mapper/
then choose your geographic search unit

From the Director:

New Faces at Montana Heritage

Since the last issue of our newsletter over a year ago, we've welcomed several new Natural Heritage staff -- including two program managers -- and said good-bye to some colleagues who have made great contributions over the years. John Carlson joined us last February as Zoology Program Manager. John grew up in Fort Peck and brings a broad knowledge of Montana's fauna, including expertise with birds and prairie landscapes. Montana Fish, Wildlife and Parks is co-sponsoring John's position, with additional support from the Forest Service and BLM, to update and expand our files on animal Species of Concern.

Last May, we had the unexpected good fortune of welcoming back former NRIS Director Allan Cox as our new Systems and Services Manager. This is a revised position replacing our former Information Manager, which was vacated when Margaret Beer accepted a position with the National Park Service after 13 years of outstanding service to MTNHP. Allan brings a wealth of experience in information technology and program development, which will be a great advantage as we undertake major technology upgrades and dramatic expansion of our web-based services. To help meet these challenges, Allan will have the help of two other new IT specialists on his team – Chuck Tilly and Whitney Weber.

Whitney joined us in April as our GIS/Database Coordinator. She hails from Nebraska, by way of Southern Illinois University, where she recently completed her Masters in Wildlife Biology, with a focus on habitat analyses using GIS. Whitney manages our spatial and tabular databases, guiding them (and us) through some major upgrades and improvements. Whitney also oversees data request services and provides GIS support to The Nature Conservancy's Montana office.

Chuck Tilly came on board last November as Web Developer/Database Specialist. Chuck has a background in biology and is a talented programmer, specializing in databases and web development. We are truly fortunate as one of the few Heritage Programs to have a dedicated programmer on staff. Part of Chuck's time also goes to developing web applications -- including the Hunt Planner -- for Montana Fish, Wildlife & Parks.

In December, we welcomed a very capable new Botany Manager, Richard Caners. Unfortunately, Richard was with us for only five months before he had to return to Winnipeg due to personal family circumstances. We will be getting able assistance from several Montana botanists to help with planned fieldwork this summer, and will begin recruiting for a new Botany Manager next fall.

To help us get through this extended period of staff transitions and shortages, Terrie Kenney and Joy Lewis have been providing much-needed technical and administrative support. Terrie started out as a volunteer nearly two years ago, and is currently an Ecology Data Technician. Joy came on board last January as Office Assistant, providing support with administration, reports and projects.

These transitions have stretched our capacity at times, and we truly appreciate everyone's patience support during this process. The good news is that we are building an outstanding team -- and have the benefit of new skills, ideas and energy. You can find staff contact information on page 3 -- please feel free to call or email any of us with questions, information, or just to introduce yourself!

Optimolocus, pronounced *"op-tih-moe-**lo**-cus,"* from Latin *optimo* - best and *locus* - place; after *Enallagma optimolocus*, a damselfly found only in Montana.

A Remarkable Prairie Landscape . . . on Montana's Glaciated Plains

Throughout much of the Great Plains, grasslands have been converted to agriculture and native prairie reduced to a small fraction of their original extent. The result has been a major decline in habitat for grassland species. For example, recent declines of grassland-nesting birds have been sharper and broader than for any other bird group in North America (Knopf 1994). We are fortunate in Montana to still have extensive areas of native prairie, with some of the largest and most diverse lie in the Glaciated Plains section of northeastern Montana.

Porcupine grass - Thickspike wheatgrass prairie, South Fork Dry Creek

During the summers of 1999 and 2000, MTNHP scientists, in partnership with the Bureau of Land Management, conducted a biological inventory of Bitter and Frenchman Creek drainages in northern Valley County. This large area of rangeland comprises one of the most extensive naturally-functioning grasslands in all of the northern Great Plains, having survived the early sod-busting era due to its relatively poor soils. The few tracts that were plowed were subsequently abandoned during the drought of the 1920's and early 1930's, and ownership became concentrated into larger blocks, with ranching as the dominant land use.

Our goal was to better understand the distribution and significance of vegetation communities, as well as plant and animal Species of Concern and other grassland-obligate species. The results of our surveys show a remarkably diverse and healthy landscape, characterized by over 50 native plant communities, five of which had not been previously documented (due in part to the scarcity of previous inventory work). Some of these communities are highly productive grasslands dominated or characterized by northern porcupine grass or thickspike wheatgrass. The area seems to lie in a transition zone between the western wheatgrass-dominated grasslands to the south, and the thickspike wheatgrass-dominated grasslands to the north.

Shrublands (e.g., thorny buffaloberry) form another important type of vegetation on this landscape. They cover a small portion of the overall area, but are disproportionately important to wildlife populations because of the structural diversity that they provide. Several small stands of Wyoming big sagebrush (*Artemisia tridentata* ssp. *wyomingensis*) are at the north-eastern most edge of this species' documented range in North America. This region also includes the extensively dissected Bitter Creek Badlands, in which highly erosive soils are sculpted by water and wind into bizarre landforms. The unique geological conditions found here support distinctive plant communities, dominated by species like longleaf sagewort (*Artemisia longifolia*) and creeping juniper (*Juniperus horizontalis*), which acts as a soil stabilizer in the badlands environment.

The region's varying topography and vegetation support diverse animal communities, including a full complement of grassland-obligate birds such as Sprague's Pipit, Baird's Sparrow, Grasshopper Sparrow, McCown's Longspur, and Chestnut-collared Longspur — all Species of Potential Concern in Montana. The key to this diversity is the mosaic of grassland density and height, which provides the different foraging and nesting conditions required by each species. Other bird species, such as Ferruginous Hawk, thrive on the availability of prey, especially ground squirrels and Black-tailed Prairie Dogs.

Plains spadefoot (Spea bonbifrons)

Riparian habitats support a diversity of amphibians, including Great Plains Toad, Northern Leopard Frog, Plains Spadefoot, and Boreal Chorus Frog. Some amphibians are also attracted to stock ponds and reservoirs for breeding and over-wintering. The abundance of wetland breeding sites in the Bitter Creek area contributes to the diversity of this fauna.

Our inventory work highlighted seven areas within this landscape that perhaps best exemplify the diverse habitats and features of Montana's Northern Glaciated Plains. One of the most impressive of these, near Dry Fork Creek, supports an extensive, intact plant community of northern porcupine grass – thickspike wheatgrass *(Stipa curtiseta - Elymus lan...)*, a rare type of mid-grass prairie. This is among the largest and highest quality stands of its type documented to date in the U.S. It dominates a large block of school trust lands managed for grazing by the Montana Department of Conservation and Natural Resources, and has been maintained through the good stewardship of the DNRC and local ranchers.

The high diversity and quality of natural communities in this area reinforce recent studies that suggest large unfragmented grasslands mosaics are more likely than smaller areas to maintain the long-term diversity of native species, because of their greater habitat diversity. Large native landscapes like this can also sustain the various types of disturbances (such as fire and grazing) and biological interactions (like predator-prey interactions and herbivory) that help maintain a diverse habitat mosaic (Harris et al. 1996).

Harris, L.D., T.S. Hoctor and S.E. Gergel. 1996. Landscape processes and their significance to biodiversity conservation, Pp 319-347 in Population dynamics in ecological time and space, Univ. Chicago Press.

Knopf, F.L. 1994. Avian assemblages on altered grasslands. Studies in avian biology 15:247-257.

A full version of the report is available in Acrobat format on the MTNHP website.

The 2002 Plant List Revision is underway...

We're looking for input on Plant Species of Concern -- recommended additions to the list, deletions and rank changes. See our website for criteria and definitions, and submit any recommendations, with documentation/reasons to:

mtnhp@state.mt.us

Please also let us know if you want to receive an email when the new list is published (late spring or early summer).

A Decade of Plant Monitoring Pays Off

"I've been monitoring Lemhi penstemon since I was in diapers!" laughs botanist Steve Shelly with telltale exaggeration in his voice. He would be the first to testify that the answers to many key conservation biology questions are not available in one-time visits. Two days each summer, for a *LONG* time, he has been on his hands and knees monitoring this species.

Lemhi penstemon (*Penstemon lemhi*ensis) is a regal giant among Montana's penstemons, and a regional endemic whose entire distribution is restricted to four southwestern Montana counties and one Idaho county. In 1985, when Steve arrived in Helena as the first Montana Natural Heritage Program botanist, Lemhi penstemon was under consideration for listing as a threatened species by the U.S. Fish and Wildlife Service.

Steve and his colleague at the Idaho Conservation Data Center launched systematic surveys of Lemhi penstemon with the support of Forest Service, BLM, and Fish & Wildlife Service offices in both states. They tripled the numbers of known locations and documented that the species occupied a surprising range of habitats and elevations. But the surveys also produced nagging questions. Why were all but a couple populations so tiny? And what was the cause and consequence of their apparent decline? How is the species affected by grazing and other environmental factors, and what might help ensure its survival?

Steve began monitoring two populations on the Beaverhead-Deerlodge National Forest in 1989 to determine the life history trends. Heritage Program botanists also helped the BLM set up additional Lemhi penstemon monitoring sites in the following two years. The result? Germination and seedling establishment levels were so low that no newly-established plants survived in all of the years of monitoring (Shelly and Heidel 1995). Plant numbers in three of five monitoring samples were dropping, and one seemed ready to crash. These results raised even more concern about the species' status.

Meanwhile, Idaho botanists studying Lemhi penstemon postulated that it was a fire-dependent successional species (Moseley et al. 1990, Elzinga 1997). So Steve and his successor at MTNHP, Bonnie Heidel, proposed an interagency monitoring study of species' fire response at Montana sites. Prescribed burns were conducted during September at the three sites from 1995-1998.

Some of the post-burn results were *spectacular*. The site with the highest original numbers and most precipitous decline in Lemhi penstemon numbers had a huge flush of new plants show up in 1998, the year following fire, with ten times more new plants in one transect than in all previous years (1989-1997) combined. Even more surprising, almost none of the new plants were seedlings. Most were robust, tap-rooted rosettes that had experienced extraordinary growth (beyond seedling stage) in the ten months since prescribed burning (Heidel and Shelly in progress).

To prove that the new plants were truly established, they continued monitoring this site for another year (2000), amid the oppressive smoke of wildfires raging out of control. They found a flush of flowering and successful establishment never before documented in a cohort of new plants, producing a sharp reversal to the plummeting trend. (Results at the two other sites were less clear-cut, due to a more limited burn and browsing of plants by livestock.)

The dramatic comeback of Lemhi penstemon following a prescribed burn documents plant/fire relationships. It also documents that population trends for Lemhi penstemon are well-buffered by the existence of seedbanks, a welcome result. Carefully timed and managed prescribed fire treatments can be used to restore the habitat of Lemhi penstemon in cases where competition form other plants has increased. This type of research helps inform resource management and keep species OFF of the Endangered list.

Elzinga, C. 1997. Habitat conservation assessment and conservation strategy for the Lemhi penstemon (Penstemon lemhiensis). Report to the USDA Forest Service and USDI Bureau of Land Management, Montana/Idaho.

Heidel, B. and J. S. Shelly. In progress. The effects of fire on Lemhi penstemon (Penstemon lemhiensis), final monitoring report, 1995-2000. Report to Beaverhead National Forest and the Dillon Field Office of the Bureau of Land Management. Montana Natural Heritage Program, Helena.

Moseley, R. K., M. Mancuso, and J. Hilty.1990. Field investigation and status survey of Penstemon lemhiensis (Lemhi penstemon) in Idaho. Idaho Department of Fish and Game, Boise.

Shelly and Heidel. 1995. Demographic monitoring of Penstemon lemhiensis in southwestern Montana, final report. Report to Beaverhead National Forest.

What the heck are those guys up to?

2002 Projects

Inventory & Assessments of:

Milk/Marias River Riparian & Wetlands

Silene Spaldingii/Palouse Grasslands

Globally Rare Plants of Southwest Montana

Plant Species of Concern in Helena NF

Bat diversity & status in south-central Montana

Black-tailed prairie dog colonies on BLM land

Vegetation communities on Rangeland Ecological Sites in southeast Montana

Sagebrush ecological diversity

Vegetation communities of Rangelenad Ecological Sites in southeast Montana

Habitat & Population Studies:

Grassland bird response to grazing and cropland practices in northeast Montana

Bat use of highway bridge structures in south-central Montana

Web Resources & Data Services:

On-line Field Guide to Animal Species of Concern

On-line Field Guide to Montana's Plant Communities

Web access to Element Occurrence data

Interagency strategy for Animal Species of Concern data management

Wetlands Legacy website development and wetland data access

Montana Stewardship Mapping project

See our Website for project descriptions and staff contact names for additional information

Saw-whet owl

Montana Stewardship Mapping Project

Have you ever wanted to know how many private conservation easements there are in Montana, where they are, and how many acres? Or the pattern and percentage of public and conservation lands in Yellowstone County or along the Rocky Mountain Front? Whether the Lolo National Forest includes any special management areas? You can now find the answers to these questions on the Web with our Montana Stewardship Mapping database.

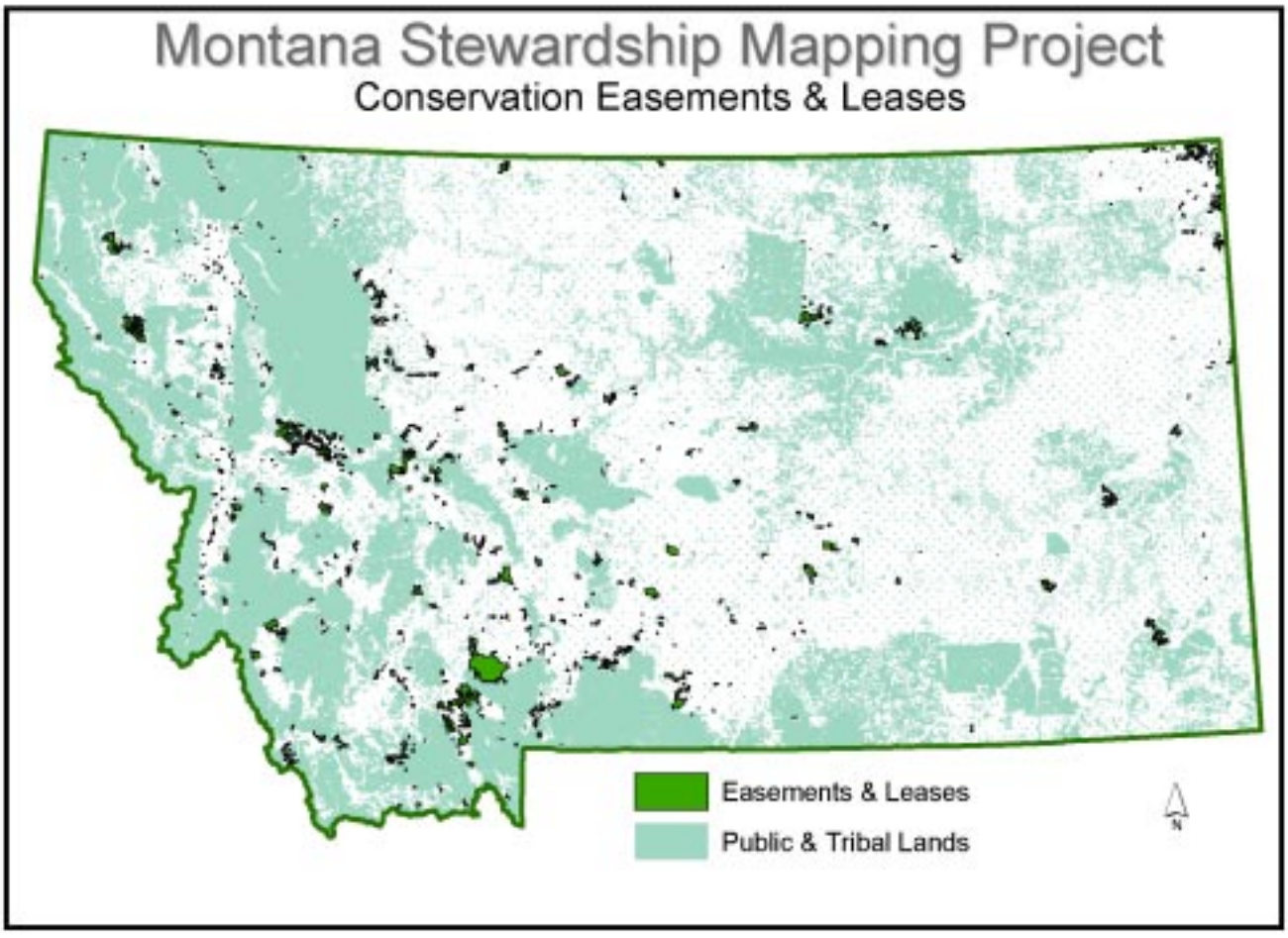
Statewide information on public land ownership and private conservation lands is essential for effective resource management, since natural resources extend across many ownership and management units. But while large land management agencies (e.g., Bureau of Land Management, U.S. Forest Service) maintain information on the properties under their jurisdiction, there has been no single source for statewide information on public land ownership, management designations, and conservation easements. The Montana Natural Heritage Program began integrating ownership and management data into a "Stewardship Mapping" data system in 1997 using geographic information system (GIS) technology. The goal of the Montana Stewardship Mapping Project is to create a single, statewide and uniform digital data set on land management that incorporates information from both public agencies and private conservation groups, on an ongoing basis. With financial support from private foundations, Montana's land trusts, and state and federal agencies, MTNHP now has the most up-to-date public ownership/management data in the state.

The Stewardship data identifies major ownership classes (federal government, state government, tribal, local government, private), as well as the specific agency with management responsibility. It also tracks special management designations including statutory designations (e.g., wilderness, national wildlife refuge, national park), as well as administratively designated management units (e.g., research natural area, game range). It includes both public and private easements, but does not track information on any other types of privately-owned lands, nor does it include any information on private landowners, even where lands are under conservation easements.

Assembling and maintaining this complex and dynamic data has required a number of steps, many of which are ongoing. One has been to establish data sharing agreements with private land trusts, public landowning agencies, tribes, and some other major landholders. Currently participating in the project with contributions of data and/or funding are land trusts and conservation organizations from around the state, including the Bitterroot Land Trust, Five Valleys Land Trust, Flathead Land Trust, Gallatin Valley Land Trust, Mid-Yellowstone Land Trust, Montana Land Reliance, Prickly Pear Land Trust, Rocky Mountain Elk Foundation, The Nature Conservancy of Montana, and the Trust for Public Land.

In addition, federal and state agencies that have contributed both data and/or financial support include the U.S. Fish and Wildlife Service, the Bureau of Land Management, the Forest Service, the Montana Department of Natural Resources and Conservation, and Department of Fish, Wildlife and Parks. Various tribes across Montana and the Plum Creek Timber Company are also data-contributors.

In addition to creating, maintaining and quality-controlling the GIS data, we also make



this information available in a variety of formats, including electronic, hard copy maps, and via the Web. The Interactive Mapper on the NRIS Website (**http://nris.state.mt.us/mapper/**) now offers the Stewardship Map as a base layer, making it easily to access, view in concert with a variety of other datasets, and print or download as an ArcView shape file. The Stewardship data replaced a less current and less accurate public land ownership data layer that did not contain special designations (e.g., Research Natural Areas), conservation easements, or leases.

This data can be used in a broad range of applications. Land status information is important as a map base to orient viewers and provide a context for interpreting natural resource data. It also provides valuable information for resource development (e.g., timber harvest and mineral patents)and for growth or open space planning.

Understanding the land management where certain species or habitats occur can help to assess the overall levels of protection or vulnerability and develop effective management plans. Other applications include tracking progress and trends in habitat conservation programs, and analyzing data on biology (species habitats, wetlands, wildlife corridors), land and resource uses (wells, subdivisions, water quality), and opportunities (parcel size, land values) to improve the effectiveness of habitat conservation efforts.

Over the coming year, we plan to finalize data exchange agreements with remaining land management agencies and land trusts, establish regular update schedules, and add more information and types of areas, such as areas under USFWS "Partners for Wildlife" agreements. Down the road, we will also incorporate the Stewardship database into on-line applications that support conservation and management planning, and integrate it into the State of Montana's Cadastral (ownership) database.

For more information about the Montana Stewardship Mapping Project, contact the Montana Natural Heritage Program at (406) 444-5354 or at nhp@state.mt.us. You may also visit the NHP website at: **http://nhp.nris.state.mt.us/** for more information about Montana's species of concern and biological information.

View and analyze Land Stewardship information using the NRIS Thematic Mapper at:

http://nris.state.mt.us/mapper/

Unified Animal Species of Concern List

Last fall, the Natural Heritage Program and the Montana Deptartment of Fish, Wildlife & Parks (FWP) issued Montana's first unified list for Animal Species of Concern. Previously, each agency maintained its own list, sometimes resulting in confusion both internally and among users. That approach began to change in 1999 when a working group of FWP and Heritage staff met to compare lists and criteria. They found no major philosophical differences, and concluded that different viewpoints were largely attributable to having different levels of information on species. They recommended a renewed effort to centralize existing data, and the creation of a unified list.

In October 2000, a memorandum of understanding was signed that created the Montana Animal Species of Concern Committee (MASCC). This group, chaired by Natural Heritage Program Zoologist John Carlson, and including representatives from FWP, and the Montana Chapters of the American Fisheries Society and Wildlife Society, met in March 2001 to review the existing list and identify needed changes and updates.

The format of the new combined list is similar to past Heritage program lists and uses the same ranking system. However, the former "Watch" list has been replaced with two new categories to further clarify the level of information on these animals: Species of Potential Concern, where trends indicate a decline, and Species on Review, where more data are needed to determine current status.

The MASCC has begun planning for the 2002 list update, and will be meeting in April to begin that process. **Any recommended changes – and additional data on any Species of Concern – should be sent to John Carlson at the Natural Heritage Program.** Look for the 2002 list to be published this summer.

We've also begun working with the Bureau of Land Management and U.S. Forest Service to assemble existing data from biologists and encourage routine collection and submission of data on Animal Species of Concern.

We're excited about these new collaborative efforts, and look forward to working together to provide the best possible data on Montana's native species.

New Reports Available On-Line

Ecologically Significant Wetlands in the Upper Yellowstone River Watershed including the Boulder, Clarks Fork Yellowstone, Shields, and Stillwater River Drainages, August 2001

Biological Survey of a Prairie Landscape in Montana's Glaciated Plains, December 2001

Ecological Inventory of Wetland Sites in the Thompson Chain of Lakes and Vicinity, November 2000

Wildfire Succession In Plant Communities Natural to the Alkali Creek Vicinity, Charles M. Russell Wildlife Refuge, Montana, 2001

2001 Plant Species of Special Concern List

2001 Animal Species of Special Concern List

Inventory of Important Biological Resources for the Upper Yellowstone River Watershed, 2001

Vegetation patterns in the Salmon-Selway ecosystem, published by the Craighead Wildlife-Wildlands Institute, 2001

To view or download these reports in Adobe pdf format, go to the MTNHP home page and click on "Reports"

Montana Natural Heritage Program

Street Address: Montana State Library,
Natural Resource Information System
1515 East Sixth Avenue, Helena, MT

Mailing Address: P.O. Box 201800
Helena, MT 59620-1800

Phone: 406-444-3009
Fax: 406-444-0581
Website: http://nhp.nris.state.mt.us

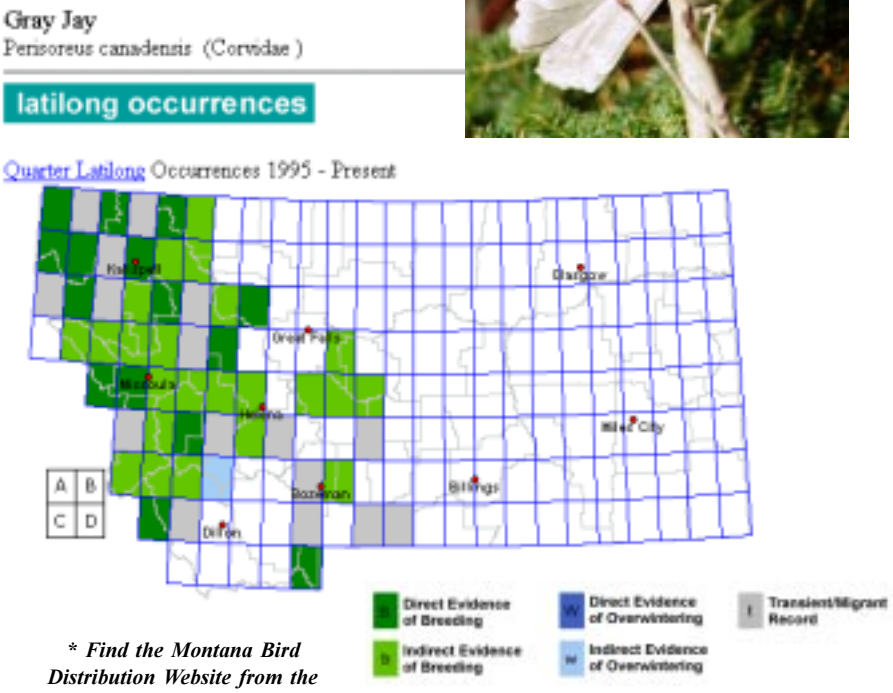
Staff:
Sue Crispin, Director
Melony Bruhn, Office/Grants Coordinator
Cathie Jean, Ecology Program Manager
Steve Cooper, Vegetation Ecologist
Marc Jones, Ecologist
John Carlson, Zoology Program Manager
Paul Hendricks, Assistant Zoologist
Allan Cox, Systems & Services Manager
Whitney Weber, GIS/Database Coordinator
Chuck Tilly, Web/Database Specialist
Cedron Jones, GIS Specialist
Martin Miller, Data Assistant
Terrie Kenney, Ecology Data Assistant
Joy Lewis, Operations/Projects Assistant

Find email addresses on the Web under "Staff Contacts"

Montana Bird Distribution Database

Birdwatching continues to grow as a source of outdoor recreation for millions of Americans. A 1996 survey of outdoor recreation found that 54 million Americans were birdwatchers, and that birding was the one of fastest growing outdoor recreation activities in the country. According to a 1997 U.S. Census Bureau's survey, birdwatching ranks second only to gardening as a favorite outdoor activity. Over the past year, Heritage Program staff have been working with Montana Audubon and the Department of Fish Wildlife and Parks to give bird enthusiasts easy access to information on where to find birds in Montana.

The Montana Bird Distribution (MBD) website makes available more than 25 years' worth of bird observations data. The observations are recorded using a "latilong" grid -- rectangles formed by degrees of latitude and longitude, then divided into quarters (see map at right). The database also documents the location and observer, and whether the birds are breeding, migrating or wintering.



**** Find the Montana Bird Distribution Website from the Natural Heritage Program Homepage ****

The new MBD website makes it easy to search this extensive database to find out where and when a species may be found, or to generate a list of birds that might inhabit a given area at various times of the year. But one of the biggest improvements is that anyone can now easily contribute to the database by entering their sightings directly on-line. Audubon staff and volunteers validate the entry, which then becomes immediately available for on-line searches. The Heritage Program houses the databases and maintains the website, linking it to Heritage databases on species of concern, which provide more detailed information on conservation status/ designations and on life history .

In addition to its popularity with Montana birders, the MBD website is a great resource for the growing numbers of out-of-state visitors who have an interest in birdwatching, and who contribute to our tourism economy. (A 1995 study found that in 1991, 25 million Americans took trips to observe, feed, or photograph birds and spent over $5.2 billion.) One Maryland visitor last summer told us "I went to the web-site and had great fun starting to enter the first page of my journal into your records. It's a fabulous site, and so easy to use!"

Montana Bird Distribution - Welcome

MENU

General Search
Species List
Enter Sightings
Home
Comments?

Click on a column heading to sort the table by that column.
Page 1 of 9 first page | prev page | next page | last page

ID	Common Name	QLL	Status	YEAR	MONTH	Name	LOCATION	COMMENTS
53660	Gray Jay	28C	t	1998	9	Don Stoecker	Warm Springs Cr Rd	
52839	Gray Jay	26B	b	1997	7	Hendricks, D.P.	Btwn Cramer Creek and Copper Cliff	
52498	Gray Jay	01C	t	1997	8	Maxell, B.A.	1.7 mi NNW of Gordan Mtn	
52581	Gray Jay	15B	t	1997	8	Maxell, B.A.	Spottad Bear River	
52772	Gray Jay	27A	b	1997	7	Hendricks, D.P.	Btwn Avon and Blackfoot City	
49265	Gray Jay	15A	t	1996	8	Hill, Liz	Near Howellia Pond	
48500	Gray Jay	36D	t	1996	9	Stoecker, Don	Crystal Park	
48900	Gray Jay	25D	w	1996	12	Ormiston, John H.	Hamilton area Christmas bird count	2
48039	Gray Jay	26B	t	1996	11	Lockman, D.	Lubrecht Experimental Forest	2 birds foraging
48028	Gray Jay	26B	t	1996	11	Lockman, D.	Ca 5 mi SE of Clearwater Junction	
48346	Gray Jay	26D	B	1992	5	Stoecker, Don		Adult feeding young
25402	Gray Jay	26B	b	1995	8	Raichel, Jim		
25403	Gray Jay	26B	b	1994	6	PRANGE J C	BBS ROUTE 906 = ELEVATION MT	
25404	Gray Jay	26C	b	1992	6	Barry, Clifton	Skalkaho Drainage	

The Economic Contributions of Bird and Waterfowl Recreation in the U. S. During 1991. 1995. Intl. Assoc. of Fish and Wildlife Agencies and USFWS.

Outdoor Recreation Coalition of America. 1996. National survey on recreation and the environment. [WWW Document]. http://ww.outdoorlink.com/infosource/nsre/index.htm

U.S. Department of the Interior, Fish & Wildlife Service & U.S. Department of Commerce, Bureau of the Census. 1997. 1996 national survey of fishing, hunting, and wildlife-associated recreation: National overview. Wash. D.C.: U.S. Government Printing Office..